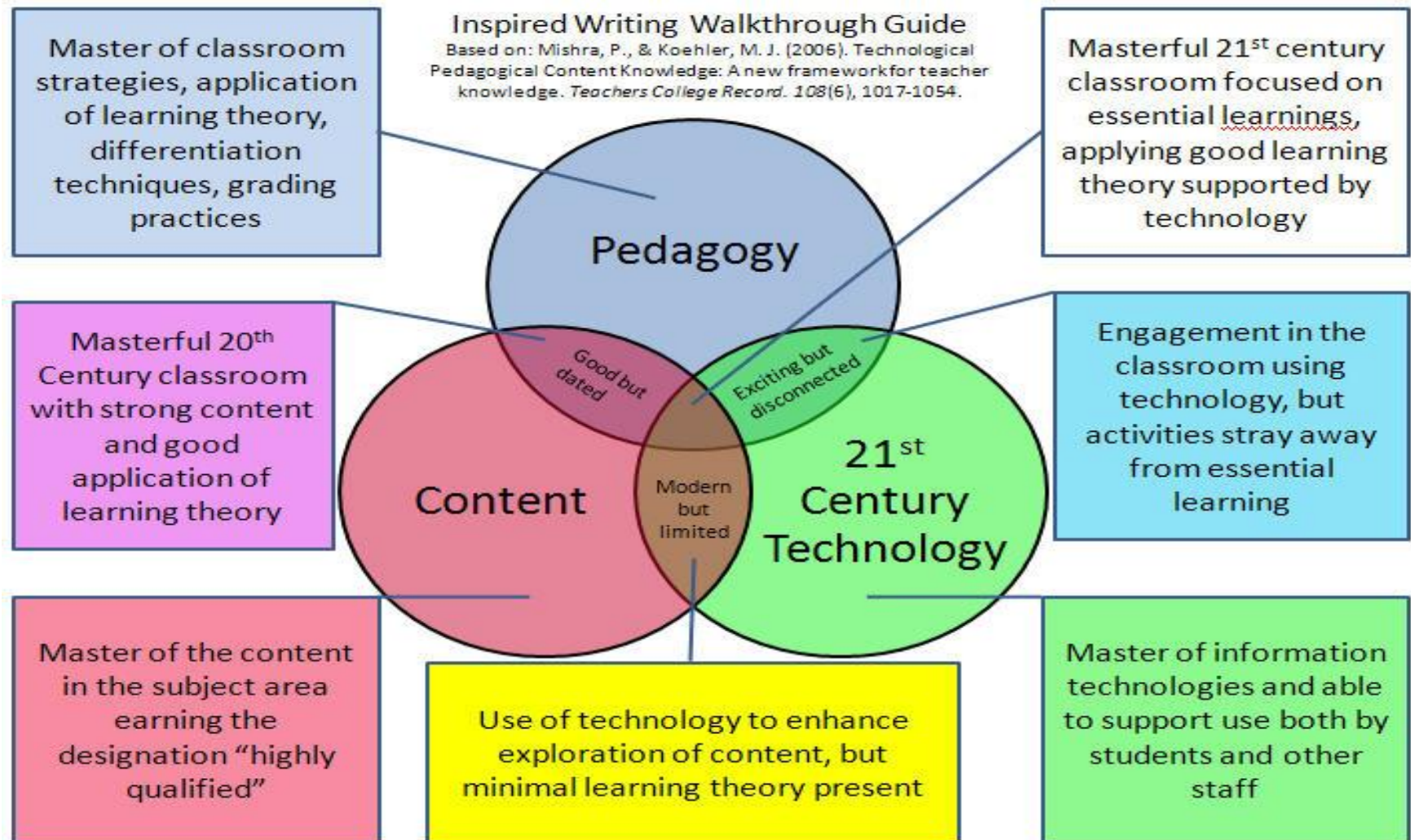


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Historical background and development

The concept TPACK is more of a framework rather than a theory. It is based on three primary forms of knowledge, content (C), pedagogy (P) and technology (T), which are not looked at in isolation of one another but as interrelated and interwoven constructs. Koehler in <http://mkoehler.educ.msu.edu/tpack/what-is-tpack/> states that there are new kinds of knowledge that lie at the intersections between content, pedagogy and technology. Considering P and C together we get Pedagogical Content Knowledge (PCK), Shulman's idea of knowledge of pedagogy that is applicable to the teaching of specific content. Similarly, considering T and C taken together, we get Technological Content Knowledge (TCK), the knowledge of the relationship between technology and content. At the intersection of T and P, is Technological Pedagogical Knowledge (TPK), which emphasizes the existence, components and capabilities of various technologies as they are used in the settings of teaching and learning (<http://mkoehler.educ.msu.edu/tpack/what-is-tpack/>).

The Technological Pedagogical Content Knowledge (TPACK) is found at the intersection of all these three forms of knowledge. To be considered as having fully achieved technology integration, a teacher should be able to understand and negotiate the relationships between these components. The ability to negotiate these relationships puts the teacher on a higher pedestal than a subject specialist, a technology expert and a pedagogical specialist. Therefore, to effectively integrate technology into his specific teaching subject, it is required of the teacher to not only be sensitive to the relationship between these three components but also understand how technology relates to the pedagogy and content. The origins of this framework can be traced back to Shulman's 1986 & 1987 conception of pedagogical content knowledge (PCK) and explicitly integrating the component of technological knowledge into the model (Graham, 2011). Graham says that the TPACK framework is most commonly represented using a Venn diagram with three overlapping circles, each representing a distinct form of teacher knowledge. The framework includes three core categories of knowledge: pedagogical knowledge (PK), content knowledge (CK), and technological knowledge (TK). The framework proposes that combining these three core types of knowledge results in four additional types of knowledge: pedagogical content knowledge (PCK), technological pedagogical knowledge (TPK), technological content knowledge (TCK), and technological pedagogical content knowledge (TPACK). Often contextual knowledge is also included as a part of the model

The TPACK model is the product of many people who have contributed to its development. Graham, (2011) explains that TPACK has emerged over the last decade, beginning with Pierson's 2001 initial articulation of the idea, followed by various other researchers suggesting similar conceptions of a more content-specific orientation to technology integration, Angeli & Valanides, 2005; Koehler & Mishra, 2005; Lee, 2005; Margerum-Leys & Marx, 2003; 2004; Niess, 2005; and Wallace, 2004. The term TPACK began to gain widespread popularity in 2006 after Mishra & Koehler's seminal work outlining the model and describing each of the central constructs. TPACK was called "TPCK" in the literature until 2008, when some in the research community proposed using the more easily spoken term TPACK (Graham, 2011).